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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,739	11/26/2001	Akira Nishimoto	10612/4	5667

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KENYON & KENYON
1500 K Street, N.W., Suite 700
Washington, DC 20005

EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 06/23/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,739

Applicant(s)

NISHIMOTO ET AL.

Examiner

Jennifer A Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2 – 4 are rejected as being dependent on independent claim 1.
3. Claim 1 is indefinite because it is unclear whether the “non-porous urethane resin film” is the same as the “moisture-permeable resin layer”. If the Applicant intends to further limit the “moisture-permeable resin layer” to be a “non-porous urethane resin film”, it is suggested to use the word “comprising” in place of the phrase “and including”. For the purposes of examination at this time, the Examiner will assume the Applicant’s “moisture-permeable resin layer” is a “non-porous urethane resin film” and that they are not two separate layers.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermann (US 5,763,335).

Hermann is directed to a composite material for absorbing and dissipating body fluids

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and moisture (Title).

Hermann teaches a layered composite material having a cover layer for contact with the moisture and body fluids and a foam layer including one or more sorbents, such as super absorbent polymers (column 5, lines 16 – 33), in hydrophilic polyurethane foam matrix (Abstract). The foam layer may include other active agents such as thermal phase change components (Abstract). In Figure 4, the composite material comprises a cover layer 11, a foam layer 12 and a urethane adhesive 26 (column 7, lines 55 – 60 and column 12, lines 19 – 26). The Examiner equates the cover layer 11 to Applicant's "base fabric", the foam layer 12 to the Applicant's "surface protective resin", and the urethane adhesive 26 to the Applicant's "moisture-permeable resin layer". The Examiner equates the combination of "super absorbent polymers" and "thermal phase change components" to Applicant's "high moisture-absorbing/releasing and heat-generating organic fine particles". Hermann notes that the urethane adhesive 26 used in the invention must not block the transfer of moisture or body fluids from the cover layer 11 to the foam layer 12 (column 12, lines 19 – 26), therefore, the urethane adhesive is moisture-permeable. Additionally, a film is known in the art to be a thin coating or layer of resin, therefore, the applied adhesive can be considered a film.

Although Hermann does not explicitly teach the claimed urethane resin with a coefficient of moisture absorption is 40% or more at 30C and 90% of relative humidity as required by claim 1 and the composite fabric has 3% RH or more of a humidity difference between the surface protective resin side of the fabric and the moisture-permeable resin layer side of the fabric as required by claim 4, it is reasonable to presume that urethane resin with a coefficient of moisture absorption is 40% or more at 30C and 90% of relative humidity as required by claim 1 and the

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composite fabric has 3% RH or more of a humidity difference between the surface protective resin side of the fabric and the moisture-permeable resin layer side of the fabric as required by claim 4 is inherent to Hermann. Support for said presumption is found in the use of like materials (i.e. a composite comprising a hydrophilic urethane resin containing moisture absorbing/releasing and heat-generating particles, base fabric and a non-porous urethane film) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of urethane resin with a coefficient of moisture absorption is 40% or more at 30C and 90% of relative humidity as required by claim 1 and the composite fabric has 3% RH or more of a humidity difference between the surface protective resin side of the fabric and the moisture-permeable resin layer side of the fabric as required by claim 4 would obviously have been present once the Hermann product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Hermann discloses the claimed invention except for that the surface protective resin is applied in a dry mass of 0.5 to 10 g/m². It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the surface protective resin in a dry mass of 0.5 to 10 g/m² since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to apply the resin in a dry mass of 0.5 to 10 g/m² in order to create a suitably flexible and durable composite.

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6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermann (US 5,763,335) in view of Nishida (US 6,080,797).

Hermann teaches the claimed invention except fails to disclose that the high-moisture absorbing/releasing and heat-generating organic fine particles are cross-linked acrylonitrile polymers containing 1.0 mmol/g or more carboxylate salt groups or are cross-linked polymers using two or more polymerizable vinyl groups to attain an acrylonitrile cross-linked polymer containing 1.0 mmol/g or more carboxylate salt groups.

Nishida teaches a method for the manufacture of a porous moisture-absorbing and desorbing organic polymer, characterized in that, a polymer solution prepared from an acrylonitrile polymer and a solvent therefor is coagulated in a solvent which is a non-solvent for said polymer to give a porous acrylonitrile polymer, then cross-links are introduced therein by the reaction with a hydrazine compound, and a hydrolysis of the residual nitril group is conducted to introduce 2.0-12.0 meq/g (1 millequivalent = 1 mole) of carboxyl groups of a salt type (column 2, lines 35 – 50). Additionally, Nishida teaches that other monomers may be co-polymerized with acrylonitrile such as vinyl compounds (column 4, lines 30 – 40).


It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cross-linked acrylonitrile polymer as suggested by Nita as the high-moisture absorbing/releasing and heat-generating organic fine particles in the invention of Hermann motivated by the desire to consolidate the moisture absorbing/releasing *and* heat-generating function into one type of particle rather than a mixture of particles.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jennifer Boyd
June 12, 2003

